SERIES 1200
High-Speed Digital Printers

FRANKLIN
electronics, inc.
A DIVISION OF THE ANELEX CORPORATION

FRANKLIN SERIES 1200 High-Speed Digit

20 lines per second . . . 1 to 12 columns . . . all solid state

Franklin Series 1200 Digital Printers are high-speed, parallel-entry digital recorders capable of printing a line of 12 characters at speeds of 20 lines per second. The characters printed are the ten decimal digits and various common signs and symbols. See specifications under flap at right for complete data.

Information for each column of print is entered into the printer as a four-line binary code. The code may be either 8421, 4221, or 2421, depending upon the pre-set indexing of a print drum. The code may be changed at any time, at the convenience of the user, by changing the print-drum indexing. No electrical changes are required.

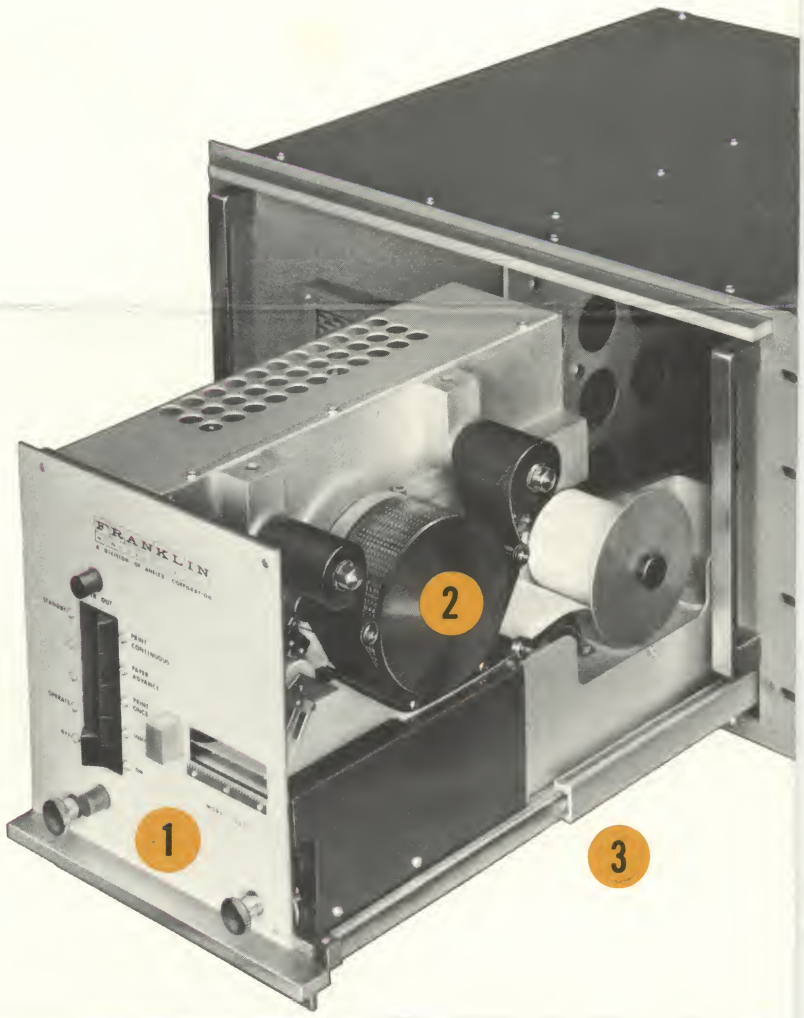
Complete provisions for local and remote input and output command signals are included for adapting the printer to various system schemes with a minimum of special circuitry.

The printer is of simple, straightforward design. It uses a simple, two-piece, electromagnetically operated hammer for each column of print and thus contains none of the pawls, ratchets, cams, and other high-wear parts commonly associated with printers.

Because of the simple construction there are no special maintenance problems. Lubrication is limited to the application of several drops of oil to the shaft of the drive motor each year.

Circuitry is all solid state. Modular construction is used throughout. Plug-in modules are standardized so that they can be interchanged within their particular section of the printer.

Series 1200 Digital Printers are extremely versatile. Modifications to meet special conditions of input signals, output signals, printing rates, etc. can generally be accomplished with little difficulty. Franklin welcomes inquires with respect to modifications of any kind.



Features

1. Print tape comes out of printer facing operator.
2. Character-code changes (8421, 4221, or 2421) can be made n change wiring, circuit boards, or other electrical circuitry.
3. Simple paper and tape change . . . printer mechanism slides forwar
4. Table/rack mounting cabinet at no extra cost.
5. Only two moving parts per column.
6. Free floating, electromagnetically-operated hammers have no lock mechanisms . . . cannot be made to jam or bind.
7. Fifty-millisecond print cycle has 33-millisecond printer idle time
8. User may specify any number of columns (1 to 12).
9. Made for continuous printing at 20 lines per second and slower .

al Printers

S P E C I F I

Franklin Series 1200 Digital Printers are available in a wide range
rates, etc. The specifications given below are for standard models

Model 1200
DIGITAL PRINTER
Mechanism Pulled
Forward From Cabinet
For Paper Loading

echanically . . . no need to

d on ball-bearing glide rails.

cams, toggles, triggers, or

for acquisition of new data.

M E C H A

PRINTING RATE:*

20 lines per second. (For speeds up to 40 lines per second, see Franklin Series 1230 and Series 1000 Digital Printers.)

PRINTABLE CHARACTERS PER COLUMN:

With 8421 Code: 0,1,2,3,4,5,6,7,8,9,—,~,Ω,+,•,*.
With 4221 or 2421 Code: 0,1,2,3,4,5,6,7,8,9,—,*.

NUMBER OF COLUMNS:

Any number from 1 to 12. Columns need not be adjacent.

PRINT FORMAT:

Horizontal spacing: 10 characters per inch.
Vertical spacing: 6 lines per inch.

PAPER:

Roll: 2¼ in. wide x 200 ft. long.
Flat pack: Fan fold 2¼ in. wide x 200 ft. long.

E L E C T

CHARACTER CODE:

Any four line code. Standard units are furnished for operation from 8421 coded input. Operation from 4221 or 2421 input codes is accomplished by merely changing print wheel indexing. No electrical changes required.

TABLE 1: STANDARD AND OPTIONAL INPUT CODE VOLTAGE LEVEL

BINARY NUMBER	VOLTAGE LEVELS IN VOLTS (INPUT IMPEDANCE 15,000 OHMS)			
	STANDARD	OPTIONAL EXTRA		
"0"	0	+6 to +15	0	−6 to −30
"1"	−6 to −30	0	+6 to +15	0

ZERO SUPPRESSION:

Available in any column. Optional extra. (Zero suppression refers to the non-printing of any zero not having a significant number somewhere to its left. Example: +00704 with zero suppression will print + 704.)

O P T I O N S , A C C E S S O R I E S

OPTIONS AND ACCESSORIES:

Cabinet for table or rack mounting as illustrated (Standard, no charge)
Zero suppression
Special input voltage levels and/or polarities as shown in Table 1
Roll paper, Part #1200 PR (carton of 50 rolls)
Fanfold paper, Part #1200 PF (carton of 24 packs)
Replacement ribbon, Part #1200 S

WARRANTY:

50,000,000 lines or one year, whichever occurs first.

* Physically, a Franklin Series 1200 Digital Printer is capable of speeds in excess of 20 lines per second. However, the standard Model 1200 circuitry with a Franklin Type 6B Print Drum is for use at 20 lines per second. See Franklin Model 1230 and Model 1000 for speeds to 40 lines per second.

I F I C A T I O N S

ble in a wide range of options . . . various input codes, interface signals, printing
r standard models which will meet the majority of everyday printer requirements.

E C H A N I C A L

Series 1230

MOUNTING:

Standard 19 in. rack mounting with dust cover as illustrated. Has rubber feet for table use.

FRONT PANEL CONTROLS:

1. ON-OFF switch and indicator light.
2. PAPER OUT indicator light and automatic shutdown.
3. STANDBY-PRINT CONTINUOUS switch.
4. PAPER ADVANCE switch.
5. PRINT ONCE switch.
6. OPERATE-INHIBIT switch.
7. Paper advance lever.

DIMENSIONS:

Standard 19" W panel. Dimensions behind Panel: 17" W x 10½" H x 19⅝" D.

FINISH:

Handsome grey crackle case with satin finish aluminum trim and operating panel.

CONSTRUCTION:

Modular, plug-in.

L E C T R I C A L

coded input.
anging print

OHMS)
-6 to —30
0

non-printing
ple: +00704

PRINTER INPUT COMMAND SIGNALS:

1. PRINT ONCE: Prints once when this line is shorted to circuit ground.
2. PRINT CONTINUOUS: Prints continuously at 20 lines per second when this line is shorted to circuit ground.
3. PRINT ON RECEIPT OF POSITIVE PULSE: Prints once on leading edge of positive pulse having 12 V minimum positive amplitude.
4. PRINT ON RECEIPT OF NEGATIVE PULSE: Prints once on leading edge of pulse having 12 V minimum negative amplitude.
5. INHIBIT PRINT: Prevents print upon application of —6 V potential (minimum).
6. DELAY GATE: Prevents output of command signals described immediately below upon application of —6 V potential (minimum).

PRINTER OUTPUT COMMAND SIGNALS:

1. PRINTER OPERATING IN PRINT PORTION OF CYCLE. (Two signals available.)
   a. Negative-going gate pulse of —12 V amplitude and 16 millisecond duration, corresponding to time during which printer hammers are operating.
   b. Positive-going gate pulse similar to "a" above but having a —12 V d-c reference.
2. PAPER OUT

POWER REQUIREMENTS:

105-125 V, 60 cps, 4 A maximum. (Consult factory for other voltages and frequences.)

S O R I E S , P R I C E I N F O R M A T I O N

PRICE INFORMATION:

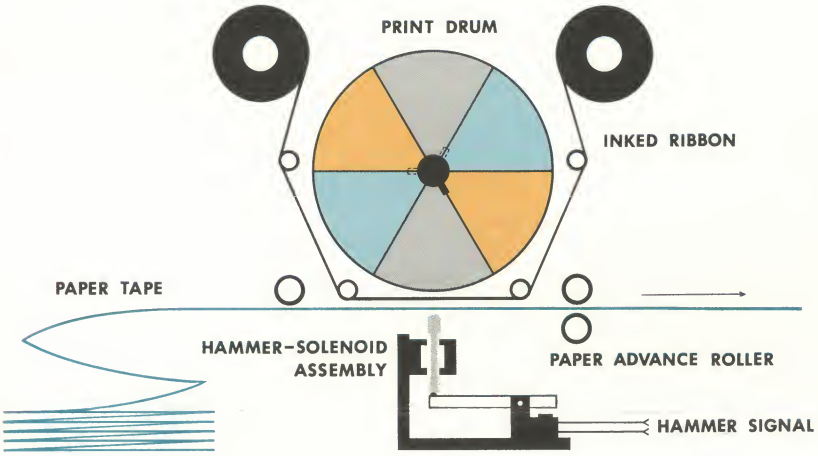
The price of a Model 1200 Digital Printer can vary from approximately $1200 to $2000, depending on the number of columns of print desired, the use of optional input-code voltage levels, the use of zero suppression in certain columns, the quantity of instruments purchased, and other options to meet special requirements.

System interface needs differ from customer to customer. When we know what these requirements are, we can prepare a quotation to suit the particular need at the lowest possible cost.

If you will let us know what your requirements are, we will be pleased to send you a formal quotation at once.

per
use
ond.

Operating Principles



PHYSICAL SCHEMATIC

The characters for each column are engraved on a steel print drum. In operation, the drum rotates at a constant speed.

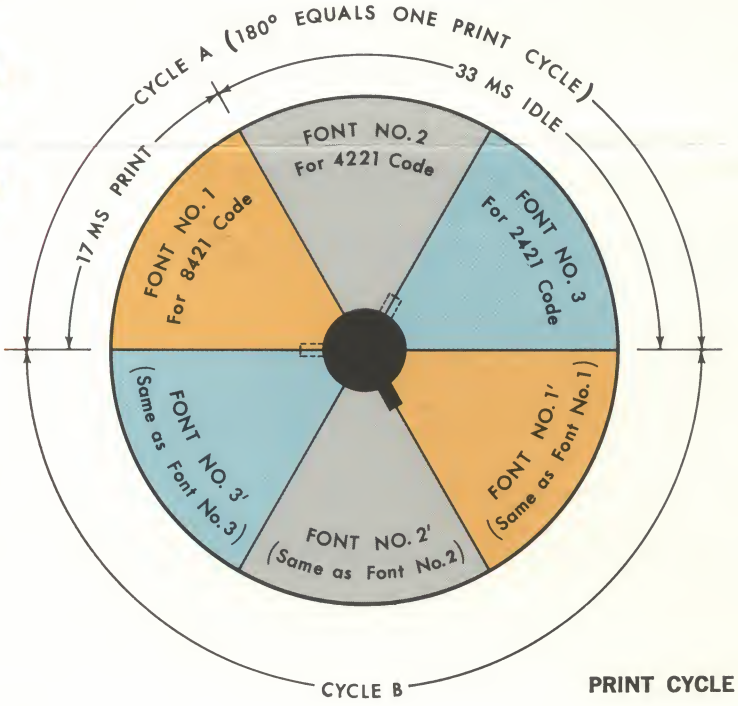
A paper tape and an inked ribbon are interposed between the print drum and a set of hammers. There is one hammer for each column. Operation of the hammers results in the printing of characters on the paper tape. Although the print drum continues to rotate while the hammers are in operation, the mass energy relationships involved and the high speed of the hammers prevents blurring.

The location of any character on the drum surface is precisely established in time by a code wheel in conjunction with a reluctance pickup. Precision machining of this part permits high accuracy in the placement of the characters on the paper tape and prevents vertical misalignment in the character rows.

A typical print-cycle begins with an **end-of-print** pulse from the printer. This pulse signals the data acquisition device to acquire data for printout.

Upon receipt of a **print** command from the data acquisition device, printout takes place. During the print portion of the operating cycle, an **inhibit** signal from the printer prevents the data acquisition device from changing input data.

When printout is complete, another **end-of-print** pulse starts a new cycle.



PRINT CYCLE

Print drum (Part No. 6B) shown on keyed print-drum shaft and indexed to utilize 8421 character code. With this indexing, fonts 1 and 1′ are in the print portions of operating cycles "A" and "B" respectively. To utilize a 4221 or a 2421 character code, the indexing is changed to bring fonts 2 and 2′ or fonts 3 and 3′ respectively into the print portions of the cycles.

These Leaders in Digital Systems Engineering use Franklin Digital Printers . . .

A. C. Spark Plug
Airborne Instruments Labs.
A.E.C.
Autonetics
Beckman Systems
Boeing
Burroughs Corp.
Control Data
Digital Products
Dow Chemical
Electronic Assoc. Inc.
Franklin Institute
General Applied Science
General Dynamics
General Electric
General Motors
Johns Hopkins Univ.
John F. Kennedy Space Center
Lockheed
M. I. T.
N. A. S. A.
National Bureau of Standards
Non-Linear Systems
Nuclear Chicago
Philco Corp.
Princeton Univ.
Rabinow Engineering
Radiation Inc.
Redcor Corp.
Republic Aviation
Rocketdyne
Sanders Assoc.
Scientific Data Systems
Space Technology Labs.
Systems Engineering
Transonics
U. S. Naval Research Labs.
Univ. of Calif.
Univ. of Penna.
Vidar Corp.

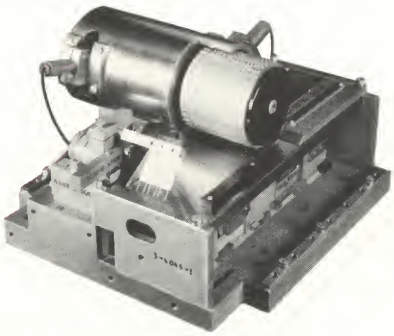
PRINTED IN U.S.A.
JJC4417—3-1

Ordering Information

Please specify . . .

1. Quantity and Model Number.
2. Number of Columns Required (1 to 12).
3. Input Code Requirements (8421, 4221 or 2421).
4. Input Code Voltage Levels (From Table 1 of Specifications).
5. Zero Suppression Requirements.
6. Special Requirements.

MILITARIZED PRINTERS



Model M-1000 Militarized Printer Mechanism

Printers and printer mechanisms meeting military specifications are available. The basic Model M-1000 printer mechanism, shown here, is usually furnished without electronics. Since requirements for associated electronics vary so greatly from application to application, the user generally furnishes his own electronics.

For specific information concerning printers, with or without electronics, please consult factory.

APPLICATION ASSISTANCE

Franklin Electronics, Inc. welcomes inquiries with respect to the application of digital printers. Whether your need is for a single, compact printer, a bank of high-speed page printers, or printing rates in excess of 40 lines per second, Franklin Electronics can meet the requirements. Whether your application is for space vehicle telemetry, ground checkout, computer control, nuclear equipment monitoring, or quality assurance, Franklin Electronics stands ready to assist. Ask any field representative, write or call . . .

FRANKLIN
electronics, inc.
East Fourth Street • Bridgeport, Pennsylvania 19405
TEL: 215-272-4800 TWX: 215-272-8696
A DIVISION OF ANELEX CORPORATION, BOSTON, MASSACHUSETTS

ANELEX
SYMBOL OF QUALITY

FIRST CLASS
Permit No.
556
Norristown, Pa.

BUSINESS REPLY MAIL
No Postage Stamp Necessary if Mailed in the United States

— POSTAGE WILL BE PAID BY —

FRANKLIN ELECTRONICS INC.
EAST FOURTH STREET
BRIDGEPORT,
PENNSYLVANIA 19405

here's the information requested...

please return the attached post card

- to help us keep our mailing list up to date
- for action
- for additional information

TO: Franklin Electronics Inc., Bridgeport, Pennsylvania 19405

To help keep your mailing list up to date..... ☐ Add my name to your mailing list.
☐ Correct my name and address as shown.

Please contact me..... ☐ For a demonstration of _____.
☐ For a technical discussion about _____.

Please forward information concerning the following.... ☐ Digital Printer Series 1000
☐ Digital Printer Series 1200
☐ Digital Printer Series M-1000 (Militarized)

NAME _____ TITLE OR POSITION _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

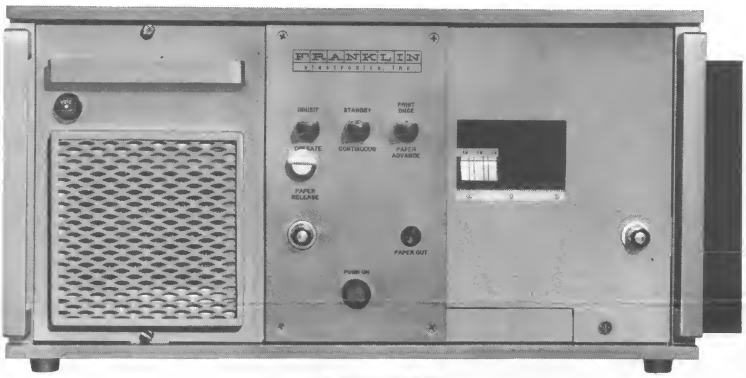
TELEPHONE _____

SERIES 1000 DIGITAL PRINTERS

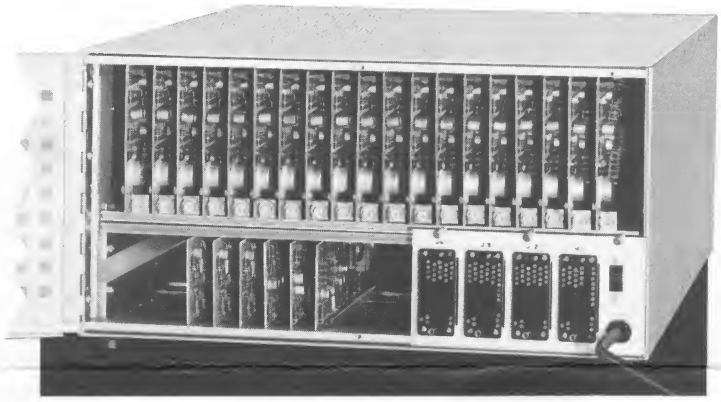
▪ 2400 lines per minute ▪ 1 to 20 columns ▪ data printout in 12 milliseconds ▪
▪ 10 to 40 different characters and blank ▪ zero suppression ▪ freedom from maintenance ▪

FRANKLIN
electronics, inc.
East Fourth Street • Bridgeport, Penna.

Franklin Series 1000 Digital Printers . . . Specifications and General Description



FRONT VIEW



BACK VIEW, REAR DOOR OPEN

versatile . . . reliable . . . maintenance free

HIGHEST SPEED, LOW-COST PRINTER AVAILABLE . . . 40, 30 or 20 lines per second as well as intermediate and lower speeds.

DECIMAL OR ALPHA-NUMERIC OPERATION. . . Prints numerals 0 through 9 as well as various symbols and the alphabet, depending upon model.

ANY INPUT CODE . . . Accepts 10-line input, or any 4-line BCD code, or mixed codes. Various code levels available.

ZERO SUPPRESSION . . . Insignificant zero suppressed optionally in any column (BCD input).

UP TO 22 COLUMNS . . . use as many as any 20 of 22 columns for printing. Two blank columns may be located at users' option.

ASYNCHRONOUS OPERATION . . . High print speed maintained with either synchronous or asynchronous data input.

ROLL OR FAN-FOLD PAPER LOADING . . . Models available for either type of paper loading.

CONTROL SIGNALS AVAILABLE FOR ALL FUNCTIONS . . . Input and output signal provisions provide for a wide variety of systems applications.

UNIQUE AND SIMPLE DESIGN . . . Permanent freedom from wear and breakdown. Only drive motor requires lubrication—two or three drops of oil a year.

ALL SOLID-STATE CIRCUITRY . . . High-efficiency, military-type circuit construction

ONLY TWO MOVING PARTS IN PAPER SHIFT MECHANISM . . . A permanently lubricated ball bearing supported rotor and an idler on nylon bearings shifts the paper.

AUTOMATIC RIBBON REVERSAL . . . At least 1,000,000 lines of print before ribbon requires changing.

RIBBON AND PAPER REPLACEMENT IN SECONDS . . . Print drum is supported at one end only. Ribbon and paper slide under drum. No threading.

"PAPER OUT" INDICATOR . . . Bright light signals when paper has run out; printer is simultaneously inhibited.

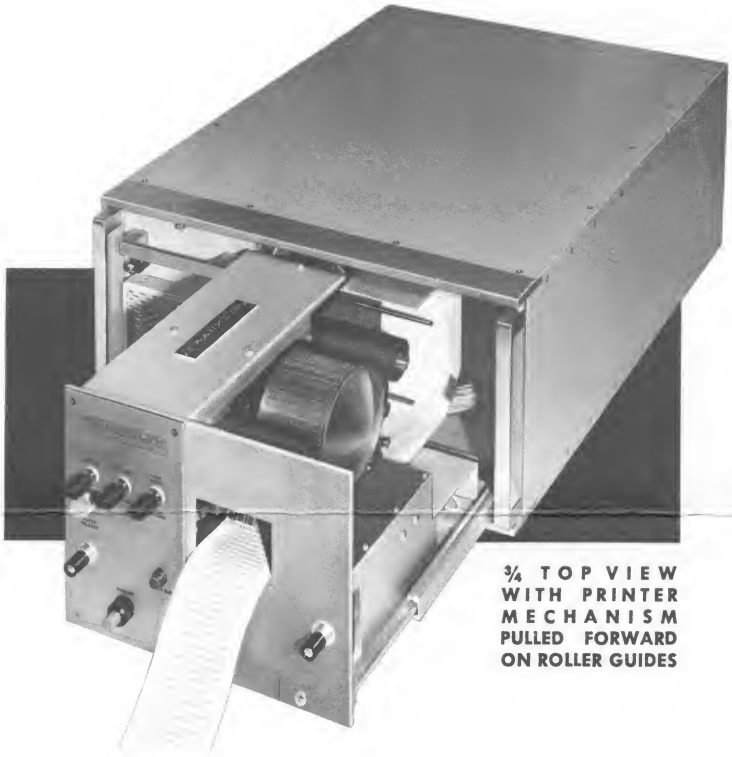
FRONT PAPER LOADING . . . Roll out printer mechanism mounted on heavy-duty roller slides. Pulls forward a full 10 inches.

SEALED, PERMANENTLY LUBRICATED RIBBON DRIVE MOTOR . . . No maintenance or lubrication required. Nylon or teflon bearings.

POSITIVE HAMMER ALIGNMENT . . . Simple external hammer alignment adjustment requires no disassembly or special tools. Alignment holds through millions of operations.

ONLY TWO MOVING PARTS PER COLUMN . . . Movement is so slight that parts cannot be observed to move. Hammers move less than 0.05 in. No lubrication ever required.

PERMANENT SOLENOID AND TIMING GEAR SETTINGS . . . No adjustment ever required.



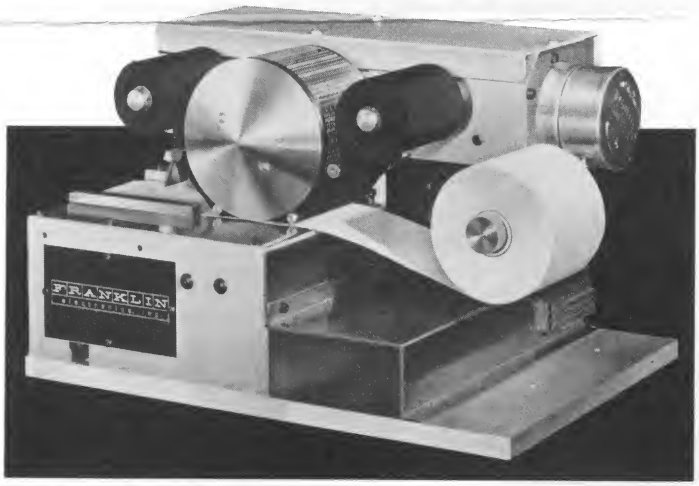
¾ TOP VIEW WITH PRINTER MECHANISM PULLED FORWARD ON ROLLER GUIDES

MODULAR CONSTRUCTION . . . Printed-circuit plug-in boards keyed and color coded for prevention of accidental misuse.

CIRCUIT SPARES . . . Extra slots in rear of printer for storing one each of the five different kinds of printed circuit boards used in the printer.

LOW NOISE LEVEL . . . Mechanical and electrical noise at low, low levels. With line filter, printer conforms to MIL-I-26600.

TABLE OR RACK MOUNTING . . . Use as table model or in any standard 19-inch rack with a depth of at least 18 in.



NOTE THE SIMPLICITY OF THE PRINTER MECHANISM

FIRST IN PRINTER DEVELOPMENTS

The Franklin Series 1000 Digital Printers offer a truly unique combination of advantages. Feature for feature, they outperform similar printers on every count. Physically and electrically they are many times more rugged than the usual printer, requiring a minimum of maintenance . . . two or three drops of oil to the drive motor per year . . . occasional cleaning of the air filter.

General overall specifications are on back cover. For complete application information, request Application and Engineering Guide 2041A.

BRIEF COMPARISON CHART

FEATURE	FRANKLIN	MFG. A	MFG. B
MAX. PRINT. RATE (Synchronous)	40 LINES/SEC.	18 LINES/SEC.	5 LINES/SEC.
MAX. PRINT. RATE (Asynchronous)	40 LINES/SEC.	ABOUT 9 LINES/SEC.	ABOUT 5 LINES/SEC.
COLUMN CAPACITY	1 TO 20.	4, 8, 12, 16.	6 TO 12.
CHARACTER CODE	BCD, 10-LINE OR MIXED CODES.	BCD.	BCD OR 10-LINE.
RACK HEIGHT	8¾ IN.	12¼ IN.	10½ IN.

0123456789-987654321
0123456789-987654321
0123456789-987654321
0123456789-987654321
0123456789-987654321
0123456789-987654321
0123456789-987654321
0123456789-987654321
0123456789-987654321
0123456789-987654321
0123456789-987654321
0123456789-987654321

FRANKLIN SERIES 1000 DIGITAL PRINTERS GENERAL SPECIFICATIONS

For complete application information, request Application and Engineering Guide 2041A.

PRINTING RATE

Decimal Printer:
40 lines per second with Print Drum Type 8A.
30 lines per second with Print Drum Type 6A.
20 lines per second with Print Drum Type 2B.

Alpha-Numeric Printer:
20 lines per second with Print Drum Type 2C.

Note: Intermediate speeds as well as lower speeds are available.

NUMBER OF COLUMNS

Any 20 of 22 columns. Location of 2 blank columns optionally selected at time of placing order.

COLUMN AND LINE SPACING

10 columns per inch; 6 lines per inch.

PAPER STOCK

2¾" wide; roll or folded as specified with order. Printer will accept either one or the other, not both.

RIBBON

A silk inked ribbon is arranged to traverse the printing area at a constant rate with automatic reversal.

PRINTABLE CHARACTERS (DRUM TYPE DESCRIPTIONS)

8A Print Drum: 22 columns of characters. All columns have 12 characters available for printing; 0 through 9, decimal point, and minus sign. With BCD input, all 12 characters can be printed in each column. With 10-line input, user may select any 11 characters for printing.

6A Print Drum: 22 columns of characters. All columns have 16 characters available for printing; 0 through 9, •, +, —, ~, Ω, *. With BCD input, user may select any 15 characters for printing in each column. With 10-line input, user may select any 11 characters for printing.

2B Print Drum: 22 columns of characters. All columns have 33 characters available for printing; 0 through 9, •, +, —, ~, Ω, *, /. <, >. In addition, all odd columns have the first half of the alphabet A through M, followed by μ; all even columns have N through Z followed by μ. With BCD input, user may select any 15 characters for printing in each column. With 10-line input, user may select any 11 characters for printing.

2C Print Drum: 22 columns of characters. All columns have 40 characters available for printing; 0 through 9, A through Z, +, —, *, •. (Straight binary only.) With BCD input, user may select 15 characters for printing in each column. With 10 line input, user may select any 11 characters for printing.

CYCLE (PRINT TIME) AT 600 RPM DRUM SPEED

8A Print Drum (40 lines per second): Prints 10 decimal digits in 10.4 milliseconds; provides 14.6 milliseconds idle time for data acquisition.

6A Print Drum (30 lines per second): Prints 10 decimal digits in 10.4 milliseconds; provides 22.9 milliseconds idle time for data acquisition.

2B Print Drum (20 lines per second): Prints 10 decimal digits in 10.4 milliseconds; provides 39.6 milliseconds idle time for data acquisition.

2C Print Drum (20 lines per second): Prints 40 alpha-numeric characters in 41.6 milliseconds; provides 8.4 milliseconds idle time for data acquisition.

DATA INPUT CODES (10-line, BCD or mixed codes).

10-LINE LOGIC LEVELS

Condition	Standard	Specials (Optional Extra)		
No Print (0)	0 V	−6 to −30 V	0 V	+6 to +15 V
Print (1)	−6 to −30 V	0 V	+6 to +15 V	0 V

BCD LOGIC LEVELS

Condition	Standard (As Specified)		Specials (Optional Extra)	
Off (0)	0 V	−8 to −30 V	0 V	+ 7 to +15 V
On (1)	−8 to −30 V	0 V	+7 to +15 V	0 V

ZERO SUPPRESSION

Option. With BCD input only.

INPUT CONTROL SIGNAL PROVISIONS

Print on positive pulse.
Print on negative pulse.
Print once.
Inhibit print.
Enable signal.

OUTPUT CONTROL SIGNAL PROVISIONS

Printer operating.
Inhibit.

POWER REQUIREMENTS

105-125 V, 60 cps standard; 4 A max. for 20 columns. Also available for 115 V, 50 cps, and 230 V, 50 or 60 cps.

MOUNTING

Adjustable to fit any standard 19" rack with a depth of at least 18". Also may be table mounted by removing mounting ears (as shown).

SIZE AND WEIGHT

8¾" H x 19" W x 23½" D. 104 lbs.

WARRANTY

50 million lines or one year, whichever occurs first.

PRICE

20 LPS Basic Decimal Printer with Type 2B Print Drum . . . $2300
Add for each column $110
30 LPS Decimal Printer with Type 6A Print Drum. Same as Basic Decimal Printer plus $250
40 LPS Decimal Printer with Type 8A Print Drum. Same as Basic Decimal Printer plus $250
20 LPS Alpha-Numeric Printer with Type 2C Print Drum. Same as Basic Decimal Printer plus $850
Set of 5 spare plug-in circuit boards (stored in printer) $275
Zero suppression. Add for each column $20

Notice: Specifications subject to change without notice. Consult factory for latest specifications.

FRANKLIN electronics, inc.
East Fourth Street • Bridgeport, Penna.

TELEPHONE: 215-272-4800
TWX: 215-272-8696

ANELEX
A DIVISION OF ANELEX CORP., BOSTON, MASS.

PRINTED IN U.S.A.

FRANKLIN electronics, inc.

ENGINEERING DATA SHEET 3016

DIGITAL PRINTER SERIES 1600

- 16 columns (or less)
- 40, 30, or 20 lines per second
- numeric
- all solid state; modular construction

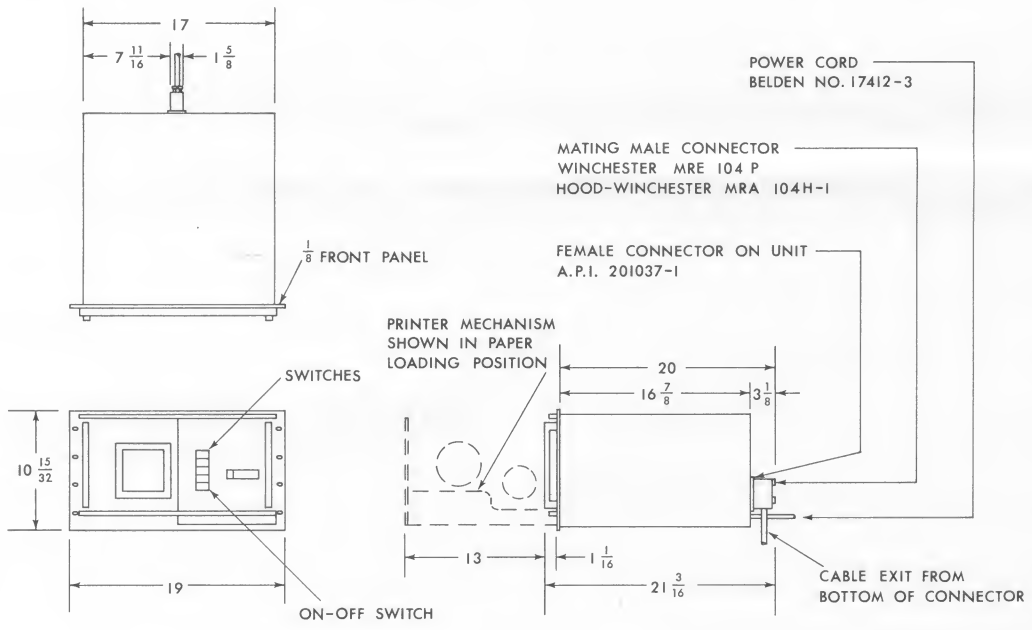
Franklin Series 1600 Digital Printers are high-speed, parallel-entry recorders with a 16 column capacity. The printer mechanism is built around a monolithic, main-body casting, resulting in high mechanical stability and low maintenance.

Under typical operating conditions, maintenance is limited to (1) periodic removal of any accumulated dust or lint, (2) cleaning the reusable air filter and (3) applying two or three drops of machine oil to the drum motor bearings every 50 million lines or yearly.

Paper loading is accomplished easily in all Franklin Printers. The printer mechanism pulls forward on full-suspension, ball-bearing glide rails. The print drum is cantilever mounted so that paper can be slipped into position without the need for threading. Paper may be roll or folded.

The printer is supplied ready for operation as illustrated. It includes all electronics, integral power supply module, handsome cabinet for table or rack mounting, line cord, inked ribbon and paper. There are no extra charges for any of these items.

Representative pricing information and specifications are listed on the back of this sheet. Please consult factory for quantity and special discounts.



DIMENSIONS

SPECIFICATIONS / SERIES 1600 DIGITAL PRINTERS

PRINTING RATE

Decimal Printer:

40 lines per second (Print Drum Type 8A-16)

30 lines per second (Print Drum Type 6A-16)

20 lines per second (Print Drum Type 6J-16)

Note: Intermediate speeds as well as lower speeds are available.

NUMBER OF COLUMNS

16 columns. Columns not desired can be eliminated, thus reducing printer cost.

COLUMN AND LINE SPACING

10 columns per inch; 6 lines per inch.

PAPER STOCK

2¼" W. x 200' L. Printer accepts either roll or folded stock.

RIBBON

Silk, inked ribbon traverses printing area at a constant rate. Automatic reversal. (A 20-line per second printer with an 8A-16 print drum is also available for use with self-impression impact paper, thus eliminating ribbon mechanism and reducing printer cost. Note that the usual drum speed of 600 rpm is reduced to 300 rpm in this configuration.)

PRINTABLE CHARACTERS (DRUM TYPE DESCRIPTIONS)

8A-16 Print Drum: 16 columns of characters. All columns have 12 characters available for printing; 0 through 9, decimal point, and minus sign. Use all 12 characters for synchronous operation. Use any 11 consecutive characters for asynchronous operation.*

6A-16 Print Drum: 16 columns of characters. All columns have 16 characters available for printing; 0 through 9, −, +, •, Ω, ~, *. Use all 16 characters for synchonous operation. Use any 15 consecutive characters for asynchronous operation.*

6J-16 Print Drum: 16 columns of characters. All columns have 16 characters available for printing 0 through 9, −, ~, Ω, +, •, *.

Optional 6J-16 drum selections at no extra cost, if specified at time of ordering:

Option 1: 0 through 9, −, +, •, Ω, ~, *.

Option 2: 0 through 9, •, +, −, A, B, C.

CYCLE (PRINT TIME) AT 600 RPM DRUM SPEED

8A-16 Print Drum (40 lines per second): Prints 10 decimal digits in 10.4 milliseconds; provides 14.6 milliseconds idle time for data acquisiton.

6A-16 Print Drum (30 lines per second): Prints 10 decimal digits in 10.4 milliseconds; provides 22.6 milliseconds idle time for data acquisition.

6J-16 Print Drum (20 lines per second): Prints 10 decimal digits in 10.4 milliseconds; provides 39.6 millseconds idle time for data acquisition.

*For a complete discussion of synchronous and asynchronous operation, see any Franklin Electronics Printer Application and Engineering Guide.

DATA INPUT CODES

BCD 8421 standard. Other BCD codes available as optional.

BCD LOGIC LEVELS

BINARY NUMBER	STANDARD	SPECIALS (OPTIONAL EXTRA)		
LOGIC 0	0 V	+6 to +15 V	0 V	−6 to −30 V
LOGIC 1	−6 to −30 V	0 V	+6 to +15 V	0 V

ZERO SUPPRESSION

Non-print of zeroes in non-significant position. (Optional extra.)

INPUT CONTROL SIGNAL PROVISIONS

Print on positive pulse.
Print on negative pulse.
Print once.
Inhibit print.
Enable signal.

OUTPUT CONTROL SIGNAL PROVISIONS

Printer recording; hold data.
Printout complete; gather new data.

CIRCUITRY

All solid state. Modular.

POWER REQUIREMENTS

105-125 V, 60 cps standard; 4 A max. for 16 columns. Also available for 115 V, 50 cps, and 230 V, 50 or 60 cps. 20 lps printer using action paper also available with 115 V 400 cps input.

MOUNTING

Standard 19" rack, with a depth of at least 18" (or table mounting.)

SIZE AND WEIGHT

8¾" H x 19" W x 20" D. 104 lbs.

FINISH

Gray crackle with satin finish aluminum handles and trim.

WARRANTY

50 million lines or one year, whichever occurs first.

REPRESENTATIVE PRICE SCHEDULE

Consult factory for special and quantity discounts.

†BASIC MODEL NO.	MAXIMUM NO. OF COLUMNS	PRINTABLE CHARACTERS (SEE SPECS)	PRINT RATE IN LINES PER SEC.	UNIT PRICE	
				BASIC PRINTER	ADD PER COLUMN
1600-20	16	NUMERIC	20	$1250	$75
1600-30	16	NUMERIC	30	$1550	$75
1600-40	16	NUMERIC	40	$1750	$75

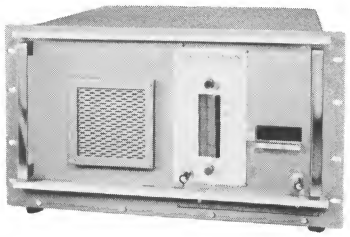
†Other models and specials are available.

FRANKLIN electronics, inc.
E. FOURTH STREET, BRIDGEPORT, PA. 19405 • TEL: 215-272-4800 • TWX: 215-272-8696
A DIVISION OF ANELEX CORPORATION
ANELEX SYMBOL OF QUALITY

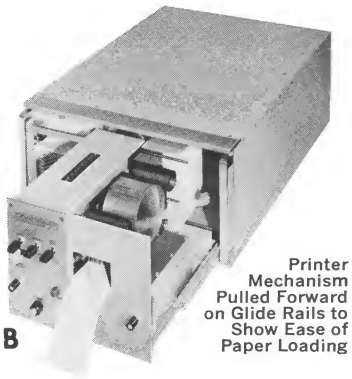
REV. A-6-66

Franklin Electronics **DIGITAL PRINTERS**

Industry's most complete line of data recorders

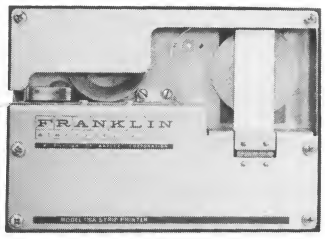


A



B

Printer Mechanism Pulled Forward on Glide Rails to Show Ease of Paper Loading



C

Franklin Electronics, Inc. offers the widest range of high-speed digital printers available anywhere. Moreover, they are the most economical high-speed recorders available, despite the fact that their appearance and reliability suggest a high cost.

The prices shown in the chart below are straightforward, giving the cost for a complete operating printer, ready to record from your digital system. Included are cabinet, power supply, logic circuits, etc. There are no special charges except, of course, where special modifications are required.

All printers are normally furnished for 110V, 60cps operation. Other voltages and frequencies are available as options. Customary data input is bit parallel, column parallel, straight binary code. Inputs such as 10-line, 4221, 2421, and mixed codes can also be furnished. Please refer to the notes under the chart, since some models accept more than one code, without the need for modification and at no extra cost.

Also please note that the Model 120A is a strip printer and is furnished without electronics. See Note 3.

BRIEF SPECIFICATIONS

BASIC MODEL NO.	TYPICAL APPEARANCE SEE ILLUST.	MAXIMUM NO. OF COLUMNS	PRINT RATE IN LINES PER SEC.	PRINTABLE CHARACTERS		[1] DIMENSIONS IN INCHES			WEIGHT IN LBS. (APPROX.)	SEE NOTE	[2] UNIT PRICE	
				NUMERIC	ALPHA-NUMERIC	W (RACK)	H	D			BASIC PRINTER	ADD PER COL.
120A	C	N/A	20		√	3	6¼	8⅝	5	3	$ 395	N/A
1200	A	12	20	√		19	10½	19⅝	85	4	1050	$75
1600	A	16	20	√		19	10½	19⅝	90	—	1250	75
1600	A	16	30	√		19	10½	19⅝	90	—	1550	75
1600	A	16	40	√		19	10½	19⅝	90	—	1750	75
1000	B	20	20	√		19	8¾	24	105	5	2504	112
1000	B	20	30	√		19	8¾	24	105	5	2754	112
1000	B	20	40	√		19	8¾	24	105	5	2754	112
1000	B	20	20		√	19	8¾	24	105	5	3194	120
2200	B	22	20	√		19	8¾	24	105	—	2700	80
2200	B	22	30	√		19	8¾	24	105	—	2800	80
2200	B	22	40	√		19	8¾	24	105	—	2850	80
2200	B	22	20		√	19	8¾	24	105	—	2850	100
3200	B	32	20	√		19	17½	20	115	6	3200	80
3200	B	32	30	√		19	17½	20	115	6	3200	80
3200	B	32	40	√		19	17½	20	115	6	3200	80
3200	B	32	20		√	19	17½	20	115	6	3250	100
M-1000	—	—	40	√	√	—	—	—	—	7	—	—

NOTES

1. Depth dimension includes connectors and is the maximum rack depth required. Models 1000 and 2200 have movable mounting ears for mounting in shallow racks where depth is limited.

2. Prices are shown for single units. Consult factory for quantity and special discounts.

3. Model 120A is a strip printer. Print rate is more accurately described as 20 **characters** per second. Characters are printed with their vertical axis perpendicular to the long axis of a ½" wide paper tape. Printer mechanism is complete with sync- and character-pulse generator, drum and paper drive etc. Electronics are not included.

4. Series 1200 Digital Printers will accept 8421, 4221, or 2421 BCD inputs, without the need for making electrical changes. Code changes are accomplished mechanically by simply changing the print-drum indexing.

5. Series 1000 Digital Printers are available with straight binary or binary coded decimal inputs, with 10-line code, or with different codes in different columns.

6. All models in the 3200 Series are furnished in two separate chassis; the printer mechanism in one chassis as illustrated at "B" and a matching second chassis containing the electronics. Each chassis has a panel height of 8¾" for a total panel height of 17½". This split-package construction permits mounting in 20" deep racks.

7. Specifications for military type printers are necessarily incomplete. Most applications require a special design. For further information please request Franklin's MIL Printer Bulletin. This bulletin gives a complete description of Franklin's military type printers.

FRANKLIN electronics, inc.

E. FOURTH STREET, BRIDGEPORT, PA. 19405 • TEL: 215-272-4800 • TWX: 215-272-8696

A DIVISION OF ANELEX CORPORATION

ANELEX SYMBOL OF QUALITY

BUSINESS REPLY MAIL

NO POSTAGE STAMP NECESSARY IF MAILED IN THE UNITED STATES

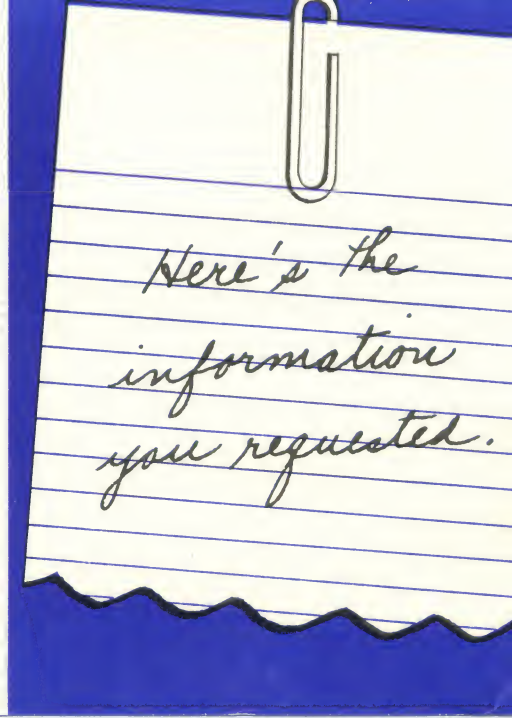
POSTAGE WILL BE PAID BY:

FRANKLIN ELECTRONICS, INC.

East Fourth Street

Bridgeport, Penna. 19405

FIRST CLASS
PERMIT NO. 556
NORRISTOWN, PA.



Fill in card and return . . .

- **for further information**
- **or for change of address.**

FRANKLIN
electronics, inc.
E. FOURTH STREET, BRIDGEPORT, PA. 19405
TEL: 215-272-4800 • TWX: 215-272-8696

Please send additional information on a printer with the following features:

☐ Number of columns. ☐ Number of lines per second.

☐ Militarized ☐ Numeric

☐ Industrial ☐ Alpha-Numeric

☐ Please contact me.

☐ Add my name to your mailing list.

☐ Correct my name and address as shown.

NAME_____ TITLE OR POSITION_____

COMPANY_____

ADDRESS_____

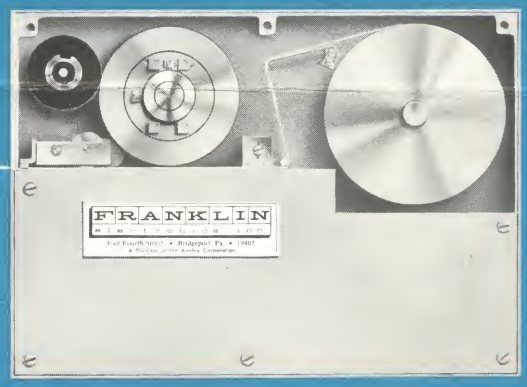
CITY_____ STATE_____ ZIP_____

TELEPHONE_____

BULLETIN 2045

MODEL 120A

STRIP PRINTER



- Low cost
- Full alpha-numeric
- 1200 characters per minute
- 3″ x 6¼″ x 8⅝″
- Less than 5 lbs.

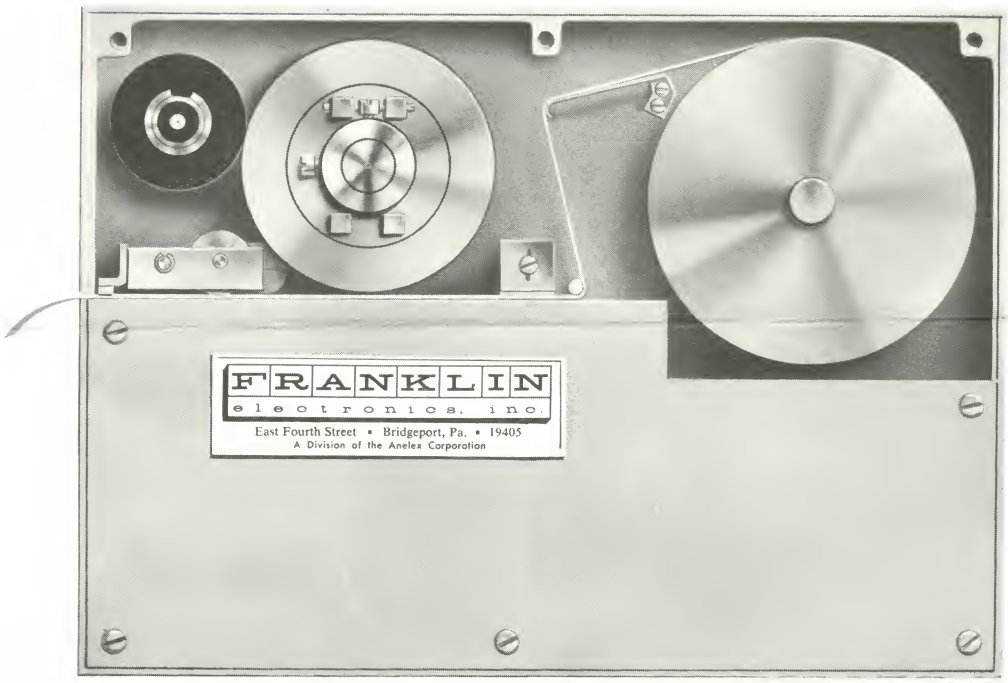
THERE IS NOTHING YOU CAN'T PRINT ON A MODEL 120A...ABSOLUTELY NOTHING...

FRANKLIN
electronics, inc.

A DIVISION OF ANELEX CORPORATION

FRANKLIN / A DIVISION OF ANELEX CORPORATION

ANELEX
SYMBOL OF QUALITY



Model 120A Strip Printer . . .

a versatile, low-cost strip printer for computer and instrumentation engineers

The Franklin Model 120A Strip Printer fills the need for a low-cost monitoring recorder. It is for use in any system where a direct readout of digitally-coded information is desired, but where the cost of a large size, multiple-column printer is prohibitive.

The Model 120A provides a full complement of characters—the alphabet, numerals, punctuation marks and various signs and symbols. (See strip at bottom of these pages for characters and sequence.)

As described in this bulletin, the Model 120A is furnished complete, ready for operation from the user's power supply and electronics. Where desired, Franklin Electronics can furnish the power supply and electronics.

Printout of any character takes place with the application of a 26 V pulse when the proper character is in position with respect to the print hammer. Synchronizing pulses, to indicate character position, are provided by a reluctance pick-up. The absence of a pulse, signals the beginning of the string of character pulses.

The use of an inking roller is an optional feature which eliminates the need for an inked ribbon and the associated ribbon-takeup and rewind mechanism. Its omission permits the convenient use of self-inking "Action" or "NCR" paper where desired.

Special versions of the Model 120A will be quoted for systems manufacturers to meet their special needs.

b ! " # $ % & ' ( ) * + , — . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @

SPECIFICATIONS / MODEL 120A STRIP PRINTER

PRINTING RATE

20 characters per second, average.

VARIETY OF CHARACTERS

Choice of any 63 of 64 characters consisting of complete alphabet; numerals 0 through 9; various punctuation marks, signs, and symbols.

SEQUENCE OF CHARACTERS ON DRUM

The characters are arranged on the print drum so that they proceed through the print position in the order used in the ASCII code. This order is shown on the tape stretching across the bottom of these pages.

CHARACTER SPACING AND SIZE

10 characters per inch. Letters of the alphabet are all capitals; characters printed are .100" high x .065" wide.

READOUT

Characters print with vertical axis perpendicular to longitudinal axis of paper strip.

PAPER STOCK

½" wide roll approx. 200 ft. long. Roll measures 3" O.D. x 7/16" I.D. Uses standard paper, or self-inking impact paper such as "Action" or "NCR."

INKING METHOD

None required with self-inking impact paper. Ink-impregnated rubber roller for standard paper is optional extra.

OUTPUT SIGNALS

Character Position: Reluctance pickup gives one pulse per character. Pulse train is a modified sine wave 2.0 V ± ½ V peak-to-peak with 0.782 ms period. Source impedance, 98 ohms.

Start of Character Sequence (Sync): Missing 64th pulse in character train. Sync pulse may be shifted in user's electronics to eliminate printing of any one of the 64 characters engraved on the print drum.

Paper Out (Optional Extra): Contact closure.

POWER REQUIREMENTS

Print Drum Drive: 105-125 V, 60 cps, single phase, 0.2 A.

Hammer Drive (Print Solenoid): Non-ringing 26 V pulse, 3.5 A, 1.3 ms duration, two-wire ungrounded.

Paper Shift Drive: Non-ringing 26 V pulse, 3.5 A, 3-8 ms duration (adjustable), two-wire ungrounded.

MOUNTING

Side Mounting: Four No. 10-32 tapped holes on 7 15/16" x 5½" centers.

Bottom Mounting: Four clearance holes for No. 10 screws on 1½" x 6" centers.

Orientation: Printer is designed for mounting vertically as pictured. While the printer will operate if mounted lying on its back, parts wear will be somewhat greater than in the usual vertical mounting.

DIMENSIONS AND WEIGHT

8⅝" D x 3" W x 6¼" H. Less than 5 lbs.

ENGINEERING ASSISTANCE

Franklin Electronics manufactures Digital Printers in a wide variety of configurations. Where unusual applications are involved, Franklin Electronics will be pleased to suggest various solutions and alternatives.

The back cover of this bulletin lists the basic characteristics of various series of Franklin Digital Printers. Within each series, a broad range of characteristics is available. For complete information on any printer type, please request the referenced bulletin.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\ ] ↑ →

QUICK REFERENCE GUIDE TO FRANKLIN DIGITAL PRINTERS

SERIES 1200 GENERAL-PURPOSE DIGITAL PRINTERS
12 Columns • 20 Lines Per Sec. • Numeric

A low-cost favorite of the OEM. Furnished complete with all electronics and power supply. Solid-state, modular construction. Operates from 4-wire, bit-parallel, column-parallel binary or BCD inputs. Accepts 8421, 4221, or 2421 input without need for electrical changes of any kind. Rugged construction includes monolithic, main-body casting. Fits standard 19″ rack or can be used on table. Panel height 10½″. Depth 19⅝″. Weight 85 lbs. See Bulletin 2050A.

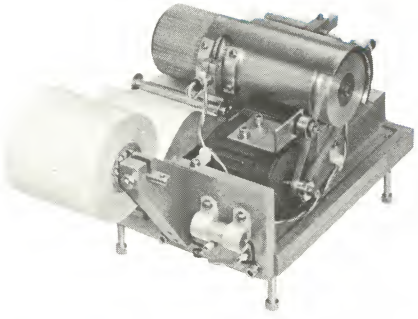
SERIES 2200 HIGH-VERSATILITY DIGITAL PRINTERS
22 Columns • 40 Lines Per Sec. • Numeric or Alpha-Numeric

A high capacity, versatile printer. Furnished complete with power supply and all electronics for 4- or 6-wire parallel data input. All solid-state modular construction. Print rate is 40 lines per second numeric and 20 lines per second alpha-numeric. Higher, lower and intermediate print rates available, depending upon user's requirements. Mounts in standard 19″ rack or can be table mounted. Panel height only 8¾″. Adjustable mounting brackets for rack depths from 18″ to 26″. Flush mounting requires 26″. Weight is 104 lbs. See Bulletin 2302.

SERIES 1000 HIGH-PERFORMANCE DIGITAL PRINTERS
20 Columns • 40 Lines Per Sec. • Numeric and Alpha-Numeric

Series 1000 Printers offer the ultimate in printer performance and versatility. They are the standard by which many manufacturers judge printer performance. They accept binary, BCD, ten-line, and mixed-code inputs. They operate synchronously or asynchronously without loss of print rate. Although nominally rated at 40 lines per second, models are available for use at higher or lower print rates. Dimensions are 8¾″ panel height x 19″ W x 23½″ D. Movable mounting brackets provide for mounting in shallow 18″ racks. Weight is 104 lbs. See Bulletin 2301.

SERIES M-1000 MILITARIZED DIGITAL PRINTERS
40 Lines Per Sec. • Numeric and Alpha-Numeric



Ruggedized, militarized digital printer. Wide variety of models customarily altered to meet user's specific requirements; includes parallel or serial entry units. All types of input codes available. Number of columns can vary up to 24. Furnished with or without electronics and power supply. Has many of the characteristics of the Series 1000 printers. See Bulletin MIL.

FRANKLIN electronics, inc.
E. FOURTH STREET, BRIDGEPORT, PA. 19405 • TEL: 215-272-4800 • TWX: 215-272-8696
A DIVISION OF ANELEX CORPORATION
ANELEX SYMBOL OF QUALITY